

Report to the Central Plant Board

Wisconsin Department of Agriculture, Trade and Consumer Protection



PLANT INDUSTRY BUREAU
2811 Agriculture Drive Madison, WI 53718-8911
2007

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APIARY PROGRAM

Apiary Program statistics show a dramatic decrease in imported colonies from 40,271 in 2005 to 23,536 in 2006 and an increase of imported queens and packages from 20,642 in 2005 to 22,250 in 2006. The statewide survey of Wisconsin apiaries shows a decrease in varroa mite infested bee hives from 85% in 2005 compared to 75% in 2004. There were 999 hives inspected.

Hives were also surveyed for small hive beetle (*Aethina tumida*). 543 hives were opened and visually inspected for the small hive beetle (SHB). Of the 543 hives opened, SHB was found in a total 16 hives, located in 7 counties.

Honeybee diseases inspected for include: American Foulbrood (AFB), European Foulbrood (EFB), chalkbrood, sacbrood and nosema. AFB was found in 3.0% of hives, EFB was found in 0.6% of hives, and chalkbrood was found in 14.3% of hives.

No Africanized honeybees were found during the survey.

County	# Hives Surveyed	
	positive	negative
WAUKESHA	6	46
MANITOWOC	2	8
SHEBOYGAN	2	16
MILWAUKEE	2	20
CHIPPEWA	2	28
WASHINGTON	1	18
WOOD	1	38
PORTAGE	0	1
GREEN LAKE	0	2
DODGE	0	3
MONROE	0	5
ADAMS	0	6
LA CROSSE	0	6
WINNEBAGO	0	7
LAFAYETTE	0	8
RICHLAND	0	8
VERNON	0	9
CALUMET	0	10
TREMPEALEAU	0	10
CRAWFORD	0	11
COLUMBIA	0	12
DUNN	0	12
CLARK	0	13
FOND DU LAC	0	13
GRANT	0	14
KENOSHA	0	18
BARRON	0	22
JEFFERSON	0	24
ROCK	0	26
WALWORTH	0	27
DANE	0	42
RACINE	0	44

Wisconsin's *Aethina tumida* Survey 2006

Apiary Inspectors at the State of Wisconsin Department of Agriculture, Trade and Consumer Protection conducted a survey for *Aethina tumida* from May 8, 2006 through October 31, 2006.

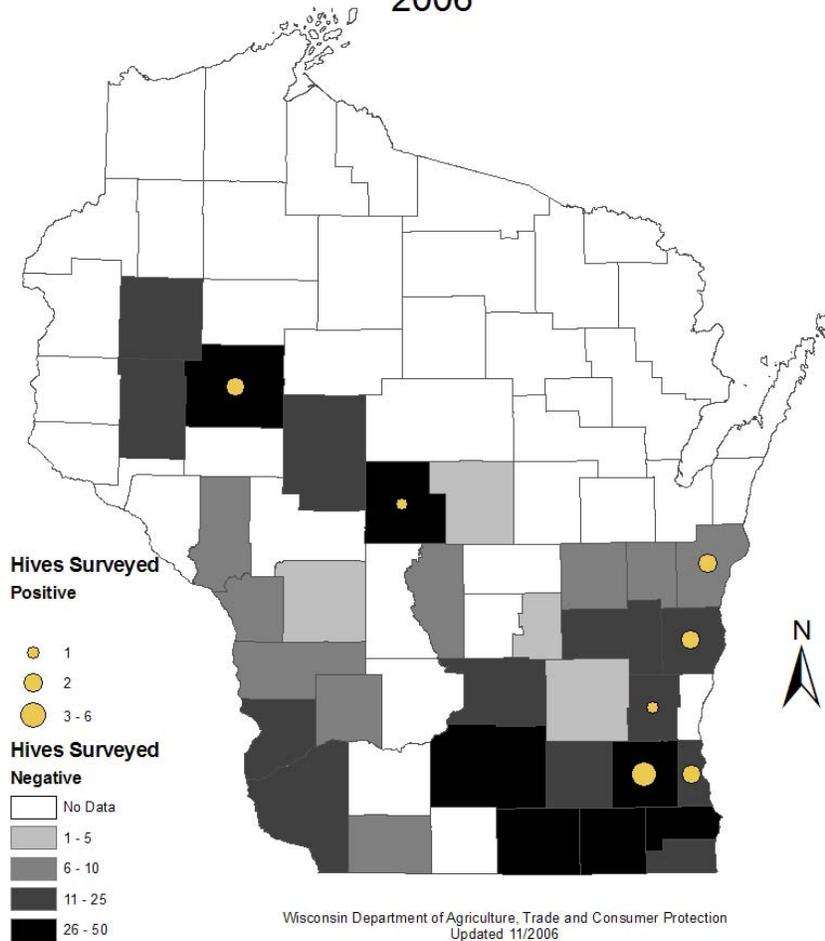
For the survey, 543 hives were opened and visually inspected for the small hive beetle (SHB). The inspection method was to open the hive and scan to see beetles running across the combs. The deeps were also removed and the bottom board was exposed to light. When exposed to light, the adult beetles move, attempting to hide in dark corners.

Of the 543 hives opened, SHB was found in a total 16 hives, located in 7 counties.

Aethina tumida was first detected in the United States in 1996, most likely arriving on a shipment of honey bees from South Africa. It was first found in Wisconsin in 1999. So far, it has not established in Wisconsin, but is reintroduced annually by beekeepers who ship their bees south for pollination services.

The SHB is a destructive pest of honey bee colonies, causing damage to comb, stored honey, and pollen

Wisconsin Small Hive Beetle Survey 2006



CHRISTMAS TREE PROGRAM

Wisconsin's Christmas tree program licenses Christmas tree growers, inspects and certifies Christmas trees as being reasonably free of injurious insects and diseases. This program provides a service to interstate and international shippers of Christmas trees who require an inspection certificate prior to shipping. Growers who sell Christmas trees locally also benefit from the program by receiving inspections to inform them of pests and diseases in their trees.

Activities in 2006

In 2006, staff conducted group inspections during a five-week time period in counties which are currently under quarantine for gypsy moth, pine shoot beetle, and have a large number of Christmas tree fields. Those five quarantined counties are: Jackson, Langlade, Lincoln, Marathon, and Waushara. The remaining counties, both counties under quarantine and counties not under quarantine, were inspected by individual inspectors. At each field location GPS

readings were recorded. Staff also inspected several wreath and roping producers in the state who requested plant health certificates.

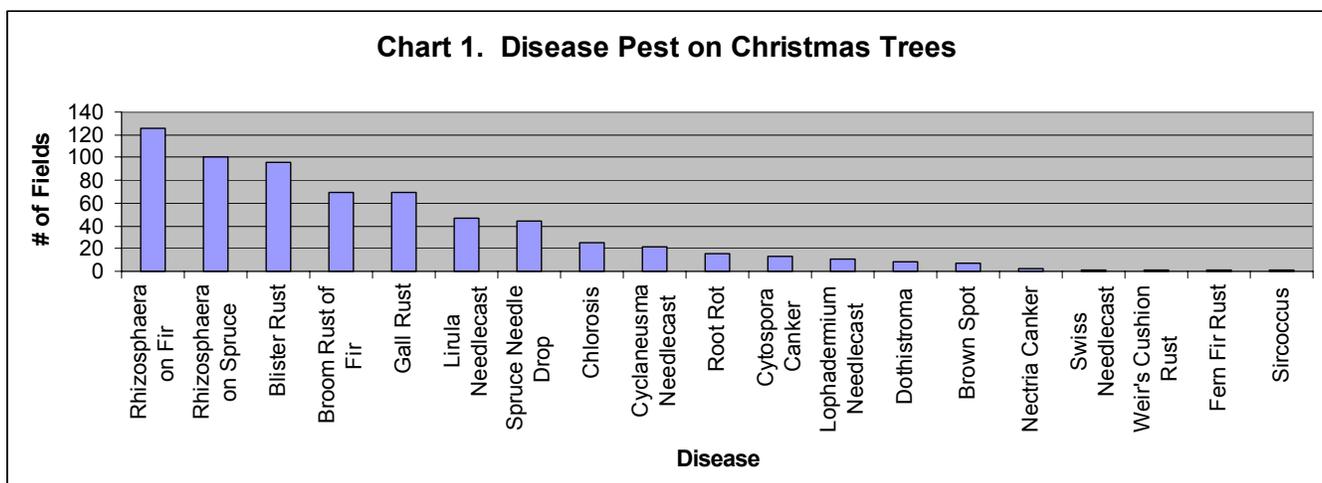
2001-2006 Field Inspection Findings

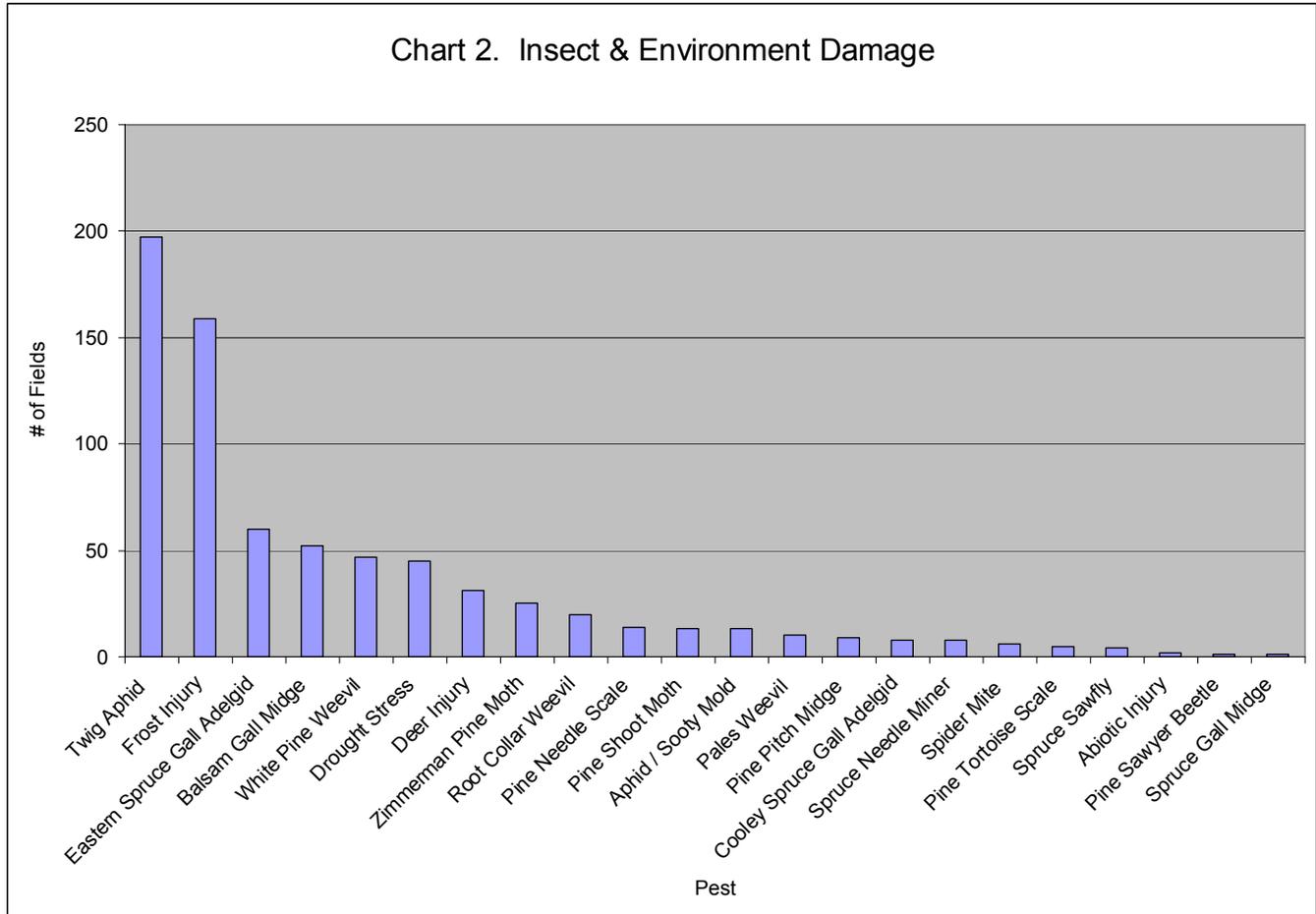
YEAR	# FIELDS INSPECTED	# OF FIELDS WITH GYPSY MOTH FINDS	# OF FIELDS WITH PINE SHOOT BEETLE FINDS
2001	420	9	0
2002	487	35	0
2003	600	61	0
2004	703	20	1
2005	661	34	0
2006	836	13	0

Field Inspections of Christmas Trees

Christmas tree inspections begin once the gypsy moth egg mass deposition is complete, typically after September 1. In addition to Christmas trees, staff inspect fence rows and wood lots adjacent to each field for evidence of gypsy moth life forms as well as indicators of pine shoot beetle. Christmas tree growers who plan to ship trees interstate and/or request a plant health certificate are the focus of high-priority inspections that much be completed by October 15.

Field location information is collected from growers and entered into a database. Support from the Gypsy Moth Trapping Program provides county-level gypsy moth trap count maps that are used to facilitate inspections and inform growers. Field inspection reports of pest and disease incidence levels, along with any plant sample lab results are provided to growers.





EMERALD ASH BORER

On Oct. 2, 2006, state and federal crews began locating and marking trees as work continues in the search for emerald ash borer (EAB), a destructive, wood boring beetle that has left behind dead and dying ash trees in the Midwest. It has not yet been found in Wisconsin. The beetle was first detected in the United States in Michigan in 2002. It has spread to Ohio, Indiana, and Ontario. In June, 2006, the emerald ash borer was discovered in northeastern Illinois.

Tree felling began in mid-December in 30 Wisconsin counties that are considered high risk because they are either closest to known EAB infestations in neighboring states, they are counties with high tourist traffic, or are counties with concentrated timber or firewood operations using ash.

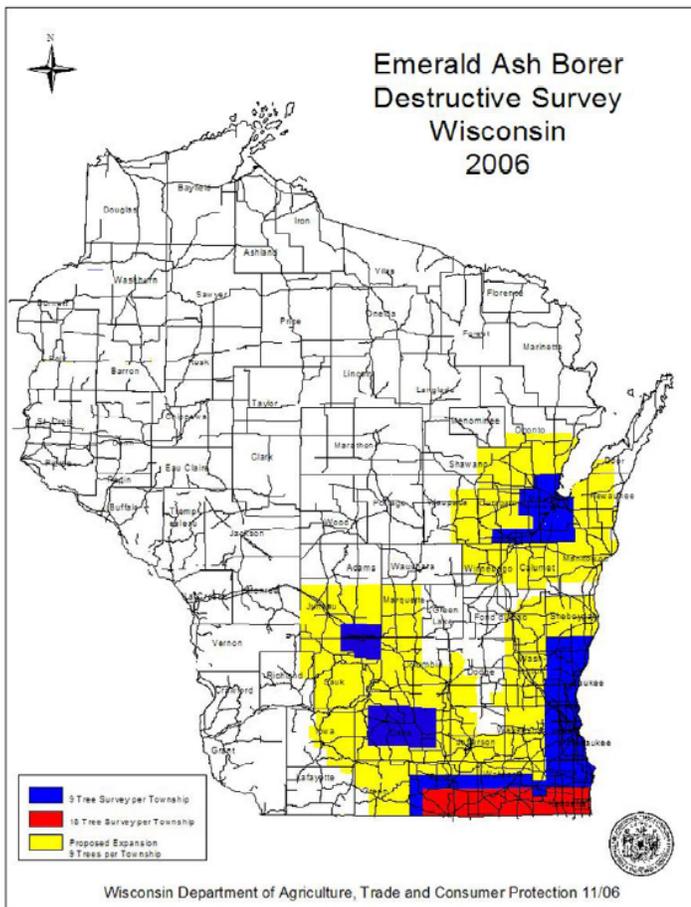
The counties are: Adams, Brown, Calumet, Columbia, Dane, Dodge, Door, Fond du Lac, Green, Iowa, Jefferson, Juneau, Kenosha, Kewaunee, Manitowoc, Marquette, Milwaukee, Oconto, Outagamie, Ozaukee, Racine, Rock, Sauk, Shawano, Sheboygan, Walworth, Washington, Waukesha, Waupaca and Winnebago.

Surveyors located ash trees in selected townships in the targeted counties. Wherever possible, public trees are used. In some situations, surveyors ask landowners for permission to take private trees.

Finding EAB while it is in the early stages of infesting ash trees involves felling trees and then carefully peeling through the bark to find hidden larvae. Trees of less than 10 inches in diameter and in declining health will be targeted.

Two strategies are used for the survey: sample trees, which will be felled and peeled this season; and detection trees, which will be girdled and left standing until the fall of 2007.

The program aims to sample 1,420 trees and girdle 4,480 trees for peeling next year.



PINE SHOOT BEETLE

On May 24, 2006, a Federal Order was issued for quarantine of all Wisconsin counties for PSB. This action was in response to the decision made by the State of Wisconsin to end intrastate quarantine of counties where PSB has been detected, communicated to the USDA APHIS by the State Plant Regulatory Official. Wisconsin is surrounded by quarantined areas and regulations are no longer halting the spread of PSB.

STATEWIDE FIELD CROP INSECT SURVEYS

European corn borer

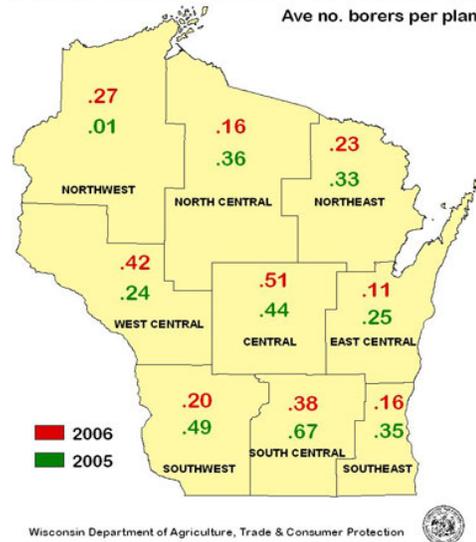
Wisconsin's annual fall survey documented a decrease in the state average European corn borer population from 0.40 in 2005 to 0.29 borer per plant in 2006 (29 borers per 100 plants). This compares to a 10-year average of 0.30 and a 50-year average of 0.48 borer per plant. The northwest, west central, and central districts showed increases from 0.01 to 0.27, 0.24 to 0.42, and 0.44 to 0.51 borer per plant, respectively. The largest decreases in 2006 were documented in the south central and southwest districts, where averages declined from 0.67 to 0.38 and 0.49 to 0.20

borer per plant. Lower densities in the southern districts may be associated with increased planting of Bt corn hybrids, although no specific evidence for this hypothesis is available at this time. Testing of field corn for transgenic traits during the summer corn rootworm beetle survey showed the highest utilization of hybrids in the southern three tiers of Wisconsin counties (see map in Corn Rootworm section).

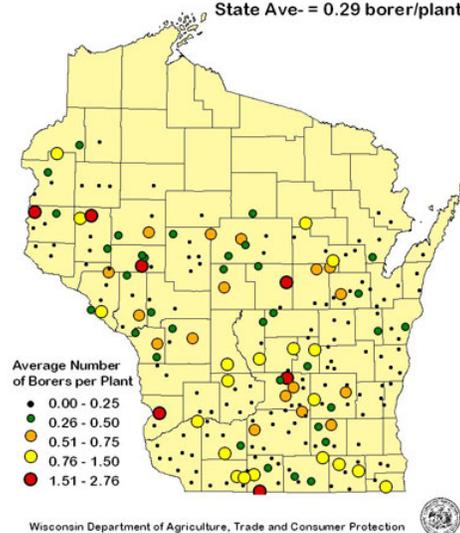
Although district averages were generally low, a total of 20% (45 of 226) of the fields surveyed had populations in excess of 0.50 borer per plant, and 8% (18 of 226) had populations above the economic threshold of 1.0 borer per plant. The west central and central districts in particular had a fair number of fields with economic populations, indicating fields in these regions should be scouted for first generation corn borer injury next June.

European corn borer populations were determined by sampling 25 consecutive stalks in 226 mature corn fields in the districts shown on the accompanying map. Plants were examined for signs of infestation, including broken stalks, exit holes, frass, and larval tunnels. Two plants were dissected to determine the average number of larvae per infested plant. A large majority of the borers were mature and appeared to be in good overwintering condition despite the abundance of rainfall in September. A statewide average of 0.29 borer per plant is comparatively low, suggesting a light first flight of corn borer moths next spring. However, favorable weather next season or a small carryover of parasites could result in an increase of damaging borers.

European Corn Borer Fall Population
Ave no. borers per plant



2006 European Corn Borer Survey
State Ave = 0.29 borer/plant



Corn rootworm

A survey to assess corn rootworm beetle populations during peak beetle emergence last August found a minor decrease in the state average number of beetles per plant, from 1.6 in 2005 to 1.4 in 2006. Results from the statewide survey of corn rootworm adults were as follows: northwest district 0.1 per plant; north central district 0.9 per plant; northeast district 1.8 per plant; west central district 0.8 per plant; central district 0.7 per plant; east central district 2.2 per plant; southwest district 2.2 per plant; south central district 1.7 per plant; southeast district 1.4 per plant.

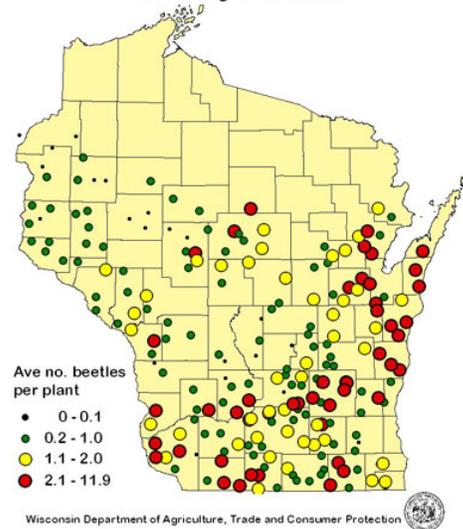
District averages declined from 2005 to 2006 in the northwest, central, southwest, south

Corn rootworm beetle 2005-2006 survey results.

District	Ave no. CRW per plant 2006 ¹	Ave no. CRW per plant 2005 ¹	No. Fields Surveyed 2006	No. Fields Surveyed 2005
Northwest	0.1	0.4	15	15
North central	0.9	0.8	16	15
Northeast	1.8	0.3	10	10
West central	0.8	0.8	29	31
Central	0.7	0.9	20	32
East central	2.2	1.1	27	38
Southwest	2.2	3.2	34	34
South central	1.7	1.9	48	49
Southeast	1.4	3.8	19	19
Statewide Ave.	1.4	1.6	218	243

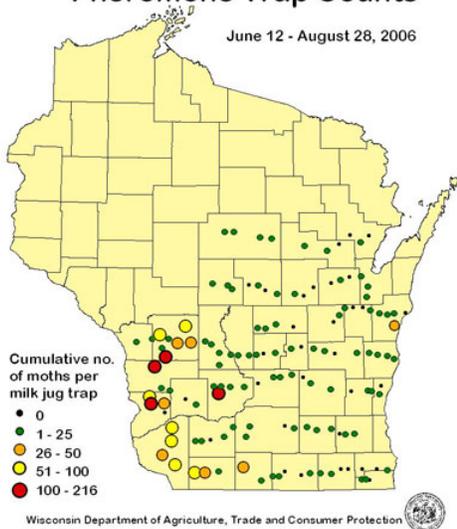
¹Average based on number of beetles per 10 corn plants examined

2006 Corn Rootworm Beetle Survey Results

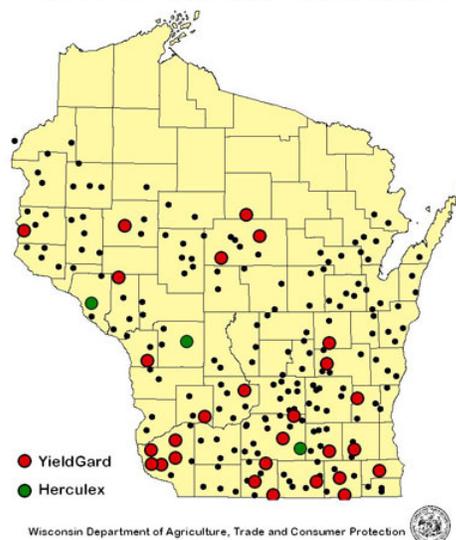


Western Bean Cutworm Pheromone Trap Counts

June 12 - August 28, 2006



YieldGard and Herculex Fields



central and southeast, and increased in the north central, northeast, and east central districts. The most substantial population increases were documented in the northeast, where the average number of corn rootworm beetles per plants rose from 0.3 in 2005 to 1.8 this season, and in the east central district, where the average doubled from 1.1 beetles per plant in 2005 to 2.2 per plant in 2006. A total of 28% (61 of 218) of the sites surveyed had non-economic averages ranging from 0-0.4 beetles per plant, 29% (64 of 218) had averages ranging from 0.5-1.0 beetles per plant, and a 43% of the fields had high populations ranging from 1.1-11.9 beetles per plant.

Based on 2006 survey findings, multi-year corn in the northeast, east central, and all southern districts is at risk of heavy larval feeding pressure next spring. Averages in the northwest district may have been artificially low because most of the fields checked were drought stressed and had brown silks at the time of the survey. A total of 3% of the fields surveyed were in the dough stage, 6% were in the dent stage, 54% were at maturity (brown silks, cob full size), 34% were in the pollinated stage, and 1% were in the silk emergence stage. Testing for transgenic traits found the YieldGard® Bt-Cry3Bb1 protein in 13% of the fields (28 of 218) surveyed, while the Herculex® Bt-Cry34Ab1 protein was detected in 1% (3 of 218) of the fields checked. A summary table with results of the 2006 corn rootworm beetle survey is shown below.

Western Bean Cutworm

Measurable populations of the western bean cutworm, *Loxagrotis albicosta* Smith were detected for the first time in Wisconsin corn fields this season. In late August, Pioneer Hi-Bred Area Agronomist Arnie Imholte discovered an infestation affecting roughly 15-20% of the ears in a field test plot south of Mineral Point, and mature larvae were found feeding in ears in Green, Green Lake, Juneau, and Marquette counties during the European corn borer survey in September and October. Corn ears in many of the fields checked had been partially consumed by either western bean cutworm or corn earworm, but no larvae were present to confirm which species was responsible for the injury. Whether the growing numbers of western bean cutworm sightings are due to an increasing incidence of this pest or increased awareness is not clear. Both are probably contributing factors.

Although its full pest potential remains to be determined, the extensive network of pheromone traps placed throughout the southern two-thirds of the state indicates this insect is most prevalent in western Wisconsin, particularly in the southwest. The accompanying map shows cumulative captures of moths at 135 trapping sites in the southern two-thirds of the state for the period of June 12 to August 28. The highest captures ranging from 100-216 moths were reported from Westby in Vernon Co., Mt. Sterling in Crawford Co., Cashton in Monroe Co., and

Sylvan in Richland Co. Seven of the 135 sites (5%) registered counts of 51-100 moths, another seven sites (5%) had catches of 26-50 moths, and a vast majority, 117 of 135 sites (87%) reported very low cumulative counts of 0-25 moths. These captures represent a significant eastward extension in the known range of this pest, which was historically restricted to the western cornbelt states.

Wisconsin's western bean cutworm population will pass the winter as non-feeding prepupae 3-9 inches beneath the soil surface and pupate next June. Peak flight activity, based on two

years of pheromone trap data, should be anticipated from the third and fourth weeks of July to the first week of August. More survey work is needed to determine the threat of western bean cutworm in Wisconsin. Most of the infestations detected this season were spotty and not particularly severe, and the numbers of moths captured in milk jug traps were very low in comparison to those registered in Illinois and Iowa (ranging up to 1,834 moths). Certainly the potential for this insect to become a major mid- to late-season pest in Wisconsin does exist, but the survey data collected this season are not conclusive enough to reliably shape management decisions at this time.

Black Cutworm

Last April a network of 41 traps were placed along Highways 11 and 18 in the southwest corner of the state in anticipation of the arrival

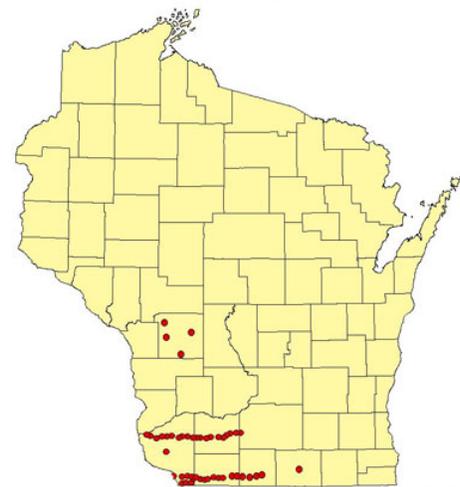
of migratory black cutworm moths from overwintering grounds in southern Louisiana and eastern Mexico. In addition, Bill Veith of Seneca Foods reported counts from Janesville, and Monroe Co. Agent Bill Halfman monitored four traps near Sparta in the west central district. DATCP survey specialists and cooperators have used pheromone traps in 2006 and preceding years to determine the arrival of moths, the start of egg laying, and when seedling corn is most susceptible to cutting.

Black cutworms arrived slightly ahead of schedule this season. The earliest migrants were registered at the Janesville trapping site on April 6, 2006. Other first seasonal moth captures were as follows: April 12 in 2005; April 19 in 2004; April 22 in 2003; April 17 in 2002; and April 21 in 2001. The first "concentrated capture" of eight moths occurred near Janesville on the night of April 24, and corn seedlings were susceptible to cutting by mid-May. Aside from a few isolated instances of cutworm damage to seedling corn in the northwest during the first week of June, this insect cannot be credited with causing any noticeable damage to corn in other parts of the state in 2006.

Corn Flea Beetle

Following a record-setting year of Stewart's wilt detections in Wisconsin seed corn fields in 2005, a spring survey for overwintered corn flea beetles was conducted to forecast the risk for Stewart's wilt in 2006. The Stewart's wilt bacterium, *Pantoea stewartii*, overwinters in the gut of corn flea beetle. If corn flea beetle survives the winter months, generally the bacterium also survives. Surveys for this insect were previously carried out during the 2000-2002 growing seasons, but DATCP specialists questioned their usefulness after the incidence of Stewart's wilt was trace to low for several successive years. The survey was re-established when more cases of Stewart's wilt were detected in 2005 than in any year since 1999. Seed field inspections found the disease in 21 of 44 fields surveyed,

2006 Black Cutworm
Pheromone Trap Locations



Wisconsin Department of Agriculture, Trade and Consumer Protection



or 48% of the fields visited in 2005. The disease occurred in eight counties, extending as far north as Eau Claire County.

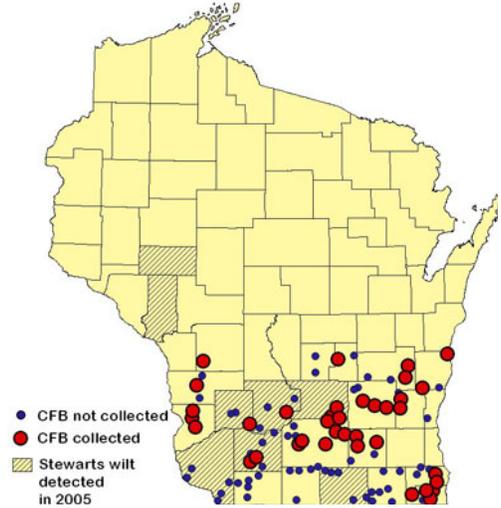
Despite the high incidence of Stewart's wilt in 2005, none of the overwintered corn flea beetles collected from 40 of 100 southern and central Wisconsin sites tested positive for the Stewart's wilt bacterium. As expected, the incidence of Stewart's wilt in seed corn fields was very low this season; the disease was found in just three Grant Co. fields earlier this fall.

Soybean aphid

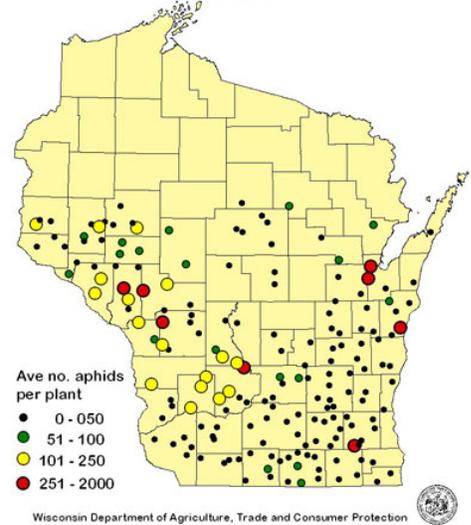
Results from an annual survey of 183 soybean fields (R2-R4 stages), conducted July 12 to August 9, showed economic populations of aphids did not develop in a majority of Wisconsin soybeans last summer. The survey found 96% (175 of 183 fields) of the soybean fields examined supported aphid populations below the action threshold of 250 aphids per plant, while just 4% (8 of 183) of the fields had soybean aphid populations exceeding the action threshold. Based on the 2006 survey, 85% of the soybean fields averaged fewer than 100 aphids per plant, 10% of the fields averaged 100-250 aphids, and 4% averaged 251-2,000 aphids per plant. A total of 58% of the fields were at the R2 development stage (full bloom), 20% were at R3 (beginning pod), and 22% were at R4 (full pod). Soybean aphid densities recorded this season were comparable to 2005 densities in most districts, higher than those documented in 2004 (the lightest aphid year on record), and much lower than the record aphid densities detected in 2003. Final survey results are summarized in the map.

Bean Leaf Beetle

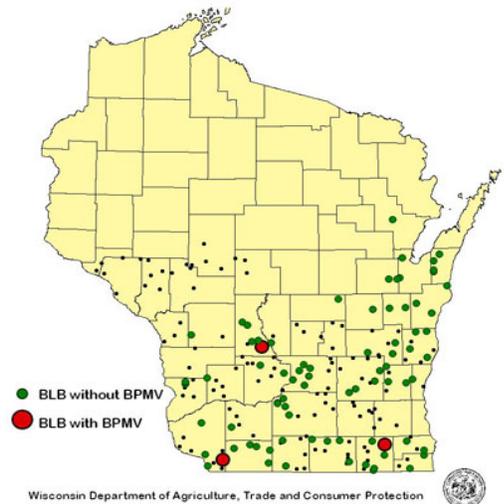
Bean Pod Mottle Virus (BPMV) was not prevalent among the 2005-2006 winter survivors, according to a survey conducted between May 4 and June 9. Overwintered beetles were collected from 81 of 202 central and southern Wisconsin first-crop alfalfa fields. Only three beetles from sites in Grant, Juneau, and Walworth Cos. were carriers of BPMV. In addition, none of the 188 soybean leaf samples collected during a summer follow-up survey from July 12 to August 8 tested positive for BPMV, indicating BPMV was probably absent from most Wisconsin fields this season.



2006 Soybean Aphid Survey Results R2-R4



2006 Survey for Overwintered Bean Leaf Beetle and BPMV in Alfalfa



STATEWIDE FIELD CROP DISEASE SURVEYS

In 2006 Plant Industry Lab tested 884 samples comprised of 103 host species affected by 50 different species of disease organisms. In addition to disease detection and crop certification surveys discussed below, ornamental nursery stock and Christmas trees were diagnosed for a variety of diseases including seven viruses. PIB lab added RT-PCR (reverse transcription-polymerase chain reaction) for soybean dwarf virus (SbDV) and tobacco rattle virus (TRV) to its diagnostic tool box. Items of note were the detection the fungus *Chalara thielavioides* in dwarf lilac, and of potyvirus in a Wisteria sample.

Soybean Virus and Asian Soybean Rust Survey

The introduction of soybean aphids raised concern about aphid-vectoring viruses such as the potyviruses: bean common mosaic virus, bean yellow mosaic virus and soybean mosaic virus (SMV). For the last four years, from late July to early August (R2-R4 growth stage), soybean fields throughout the state were sampled randomly and tested for several viruses including bean leaf beetle-vectoring bean pod mottle virus (BPMV) and thrips-vectoring tobacco streak virus (TSV). Soybean fields were also scouted for Asian soybean rust (*Phakopsora pachyrhizi*). No Asian soybean rust was observed in any of the 188 fields visited in 2006 in Wisconsin. Foliar samples from each field were tested at Plant Industry Lab using DAS ELISA (double antibody sandwich enzyme-linked immunosorbent assay). All samples tested negative for BPMV, TSV and viruses in the potyvirus group. Six fields tested positive for soybean dwarf virus (SbDV), which was found for the first time in soybeans in Wisconsin in 2003. The low incidence of SbDV is consistent with previous years' survey results. ELISA positive SBDV samples were confirmed by molecular method (RT-PCR). Overwintering bean leaf beetles were tested for BPMV in April and May with beetles from three out of 81 alfalfa fields (the beetle habitat before soybean emergence) positive for BPMV.

Snap Bean Virus Survey

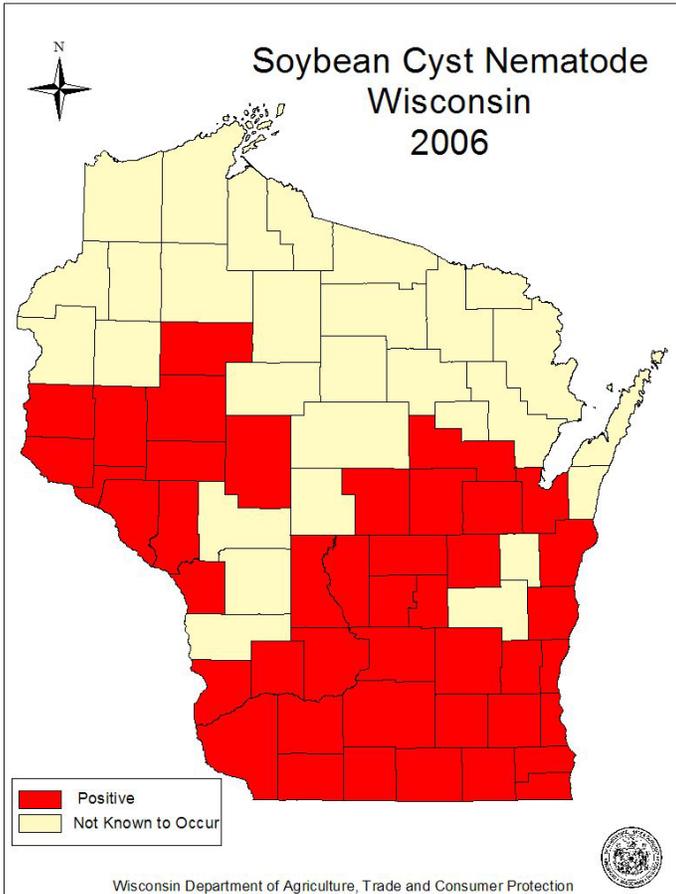
According to the Wisconsin Agricultural Statistical Service, Wisconsin is the nation's top producer of snap beans. In 2006 snap bean fields in the northwest, north-central and north-eastern part of Wisconsin (Adams, Barron, Chippewa, Langlade, Marathon, Oconto, Portage and Waushara counties) were sampled and tested for four viral diseases. None of the 62 snap bean fields tested positive for BPMV, Cucumber mosaic virus (CMV), potyviruses or TSV.

Seed Corn Survey

In 2006, 53 seed corn fields were inspected for export certification. Foliar samples were tested for Stewart's wilt (*Pantoea stewartii*) and three viruses. Stewart's wilt infected seed is prohibited from export by 23 countries worldwide. *P. stewartii* is vectored by the corn flea beetle (*Chaetocnema pulicaria*), which is also the over-wintering reservoir. Flea beetles tested in spring did not carry the disease. This bacterial disease affects susceptible sweet corn varieties and inbred lines, most hybrid corn is resistant. In 2006 the disease was found in three fields in Grant County. Stewart's wilt has been documented in various locations throughout the state over the last 7 years. To meet the import requirements of foreign trading partners, all samples were also

tested for three viruses: High plains virus (HPV), maize dwarf mosaic virus (MDMV) and wheat streak mosaic virus (WSMV). HPV, WSMV and their vector the wheat leaf curl mite (*Aceria tosichella*) are not known to occur in Wisconsin. No HPV or WSMV were detected. Four fields in Dane Co. tested positive for MDMV, which can be transmitted by more than 20 species of aphids.

Soybean Cyst Nematode Survey

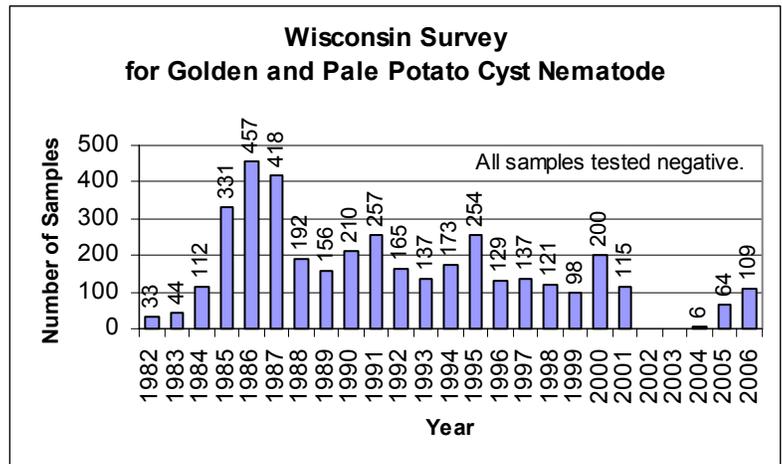


Soybean cyst nematode (*Heterodera glycines*), SCN, is the number one economic pest problem in soybean production in the U.S. causing an estimated \$800 million to \$1 billion in losses according to the American Phytopathological Society. Yield losses in Wisconsin were estimated at 1.9 million bushels in 2004. SCN was first detected in Racine County in Wisconsin in 1981. Soybean fields have been surveyed and field soils screened annually ever since. By 2006, 43 Wisconsin counties were known to be infested with SCN. The current map is based on cumulative data collected by WDATCP and the University of Wisconsin. For information about soil testing and SCN management please check the following websites <http://planthealth.info/scnguide/> and <http://www.plantpath.wisc.edu/soyhealth/index.htm>.

Golden Nematode and Pale Potato Cyst Nematode Survey

Neither the pale cyst nematode nor the golden nematode have ever been detected in Wisconsin. DATCP's Pest Survey and Control Section, participating with the USDA's Cooperative Agricultural Pest Survey (CAPS) program, has been sampling Wisconsin potato fields periodically for cyst nematodes since 1982. DATCP results for 2006 showed no evidence of either cyst nematode in 109 tested fields.

Currently USDA APHIS PPQ is formulating a survey plan that will be the standard for a nationwide survey. According to the Wisconsin Agricultural Statistical Service, Wisconsin growers produced 68,000 acres of potatoes in 2005, making the Badger State the 4th largest potato producing state in the nation. The state is also a leading seed producer, with 8,500 acres of seed production in 2006. DATCP is consulting



with UW-Madison potato experts, the UW seed potato program and industry representatives to prepare for this survey. If implemented as currently proposed, the national survey may require a tremendous increase in sampling and screening capacity for DATCP.

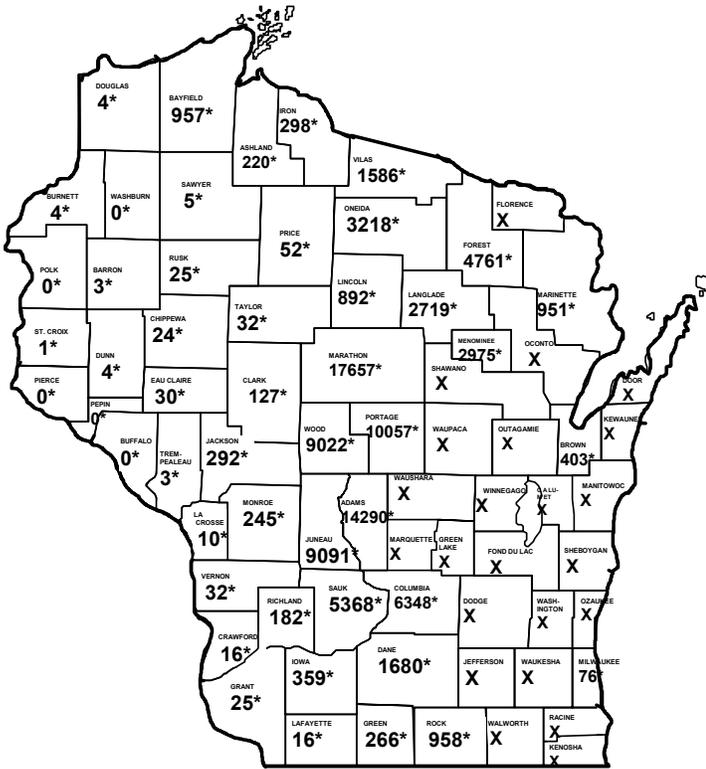
Exotic Root Knot Nematode Survey

In 2005, Plant Industry Bureau staff has started a USDA CAPS funded survey for Columbia root-knot nematode (*Meloidogyne chitwoodi*) and False Columbia root-knot nematode (*M. fallax*). These microscopic worm-like pests are closely related to northern root-knot nematode (*M. hapla*) which is present in Wisconsin and feeds on a long list of vegetables and weeds including potatoes. Columbia root knot nematode (CRN) is a regulated pest of potatoes and common in the western part of the US but has not been found in Wisconsin. The closely related False Columbia root-knot nematode (FCRN) is not known to occur in the United States. Soil samples from 173 fields in 16 potato growing counties were sampled and screened for vermiform juvenile root-knot nematodes. Testing combined classic nematology methods and molecular techniques. Root-knot nematodes are separated from soil by Baermann funnel. The resulting nematode containing effluent is subjected to real time polymerase chain reaction (PCR). Plant Industry lab adapted PCR techniques that allow for the detection and positive identification of a single nematode in a sample which would be very time consuming to achieve using classic methods alone. All soil samples from Wisconsin potato fields tested negative for Columbia root-knot nematode and False root-knot nematode. The testing did reveal several fields infested with northern root-knot nematode (*M. hapla*). This survey will continue in 2007. Both potato cyst-and exotic root-knot nematode surveys are conducted to demonstrate to our trading partners that these pests are either absent from this state, or in the event of detection, provide growers with an early warning that allows for the greatest variety of response options including eradication.

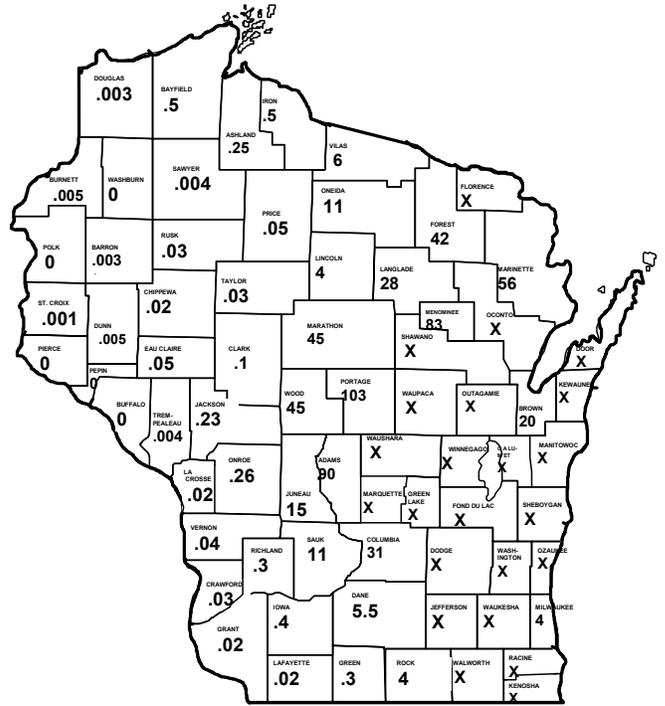
GYPSY MOTH PROGRAM

2006 Gypsy Moth Trapping and Egg Mass Survey Program

The WDATCP gypsy moth trapping program set 27,880 traps on a regular grid and 3,933 traps in delimit blocks for a total of 31,813 traps mainly in the western half of the State. Most eastern quarantine counties were not trapped in 2006. Regular grid trap densities included 1 trap per square mile and 1 trap per 4 square miles. Delimit traps were set at 4 or 9 traps per square mile. Delta and milk carton traps were used to detect and delimit populations, monitor existing populations, identify new infestations, and determine treatment efficacy. A total of 92,209 moths were caught by trappers and 29,146 moths by cooperators for a grand total of 121,355 male gypsy moths. The National Park Service served as one of our cooperators and caught 25,721 moths on the Apostle Islands. Egg mass surveyors inspected a total of 306 sites covering 1450 acres. Thirty-nine positive sites were found outside the regulated counties out of a total of fifty-four sites found or reported.



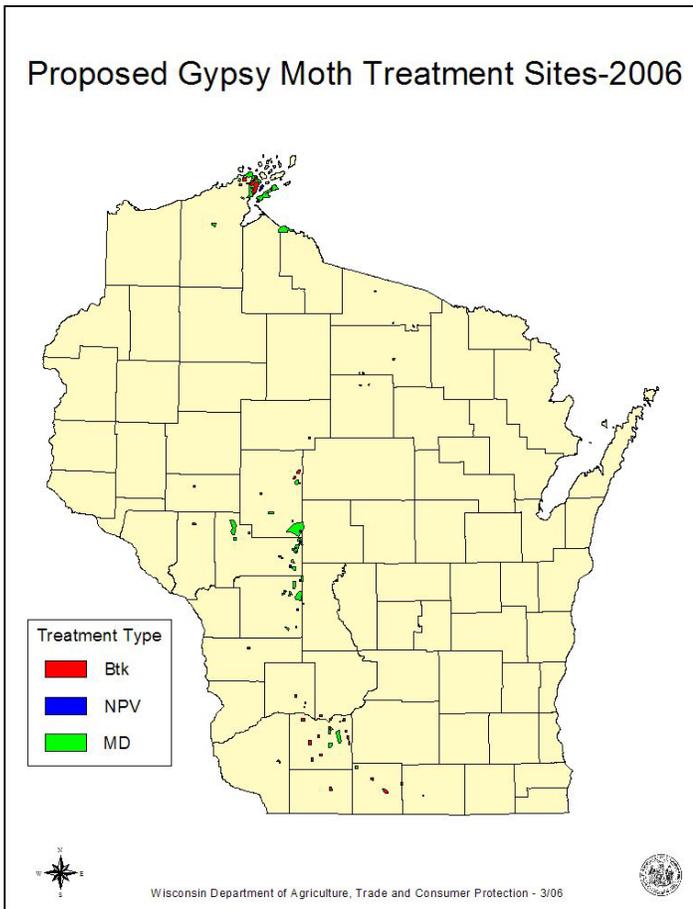
2006 Moth Catch - 121,355 Moths



GYPSY MOTH TREATMENT PROGRAM

The 2006 Gypsy Moth Slow The Spread treatment program in western Wisconsin began on May 15 and concluded on July 20, helping to guide a subsequent reduction in the spread rate of the gypsy moth a decline in moth catches statewide.

Overall, the STS program sprayed a total of 156,751 acres on 67 sites in 19 western Wisconsin counties. Sites were treated either twice (5-10 days apart) with the bio-pesticide Btk or else once with the bio-pesticide NPV (Gypchek). Other sites were treated once with pheromone flakes, a synthetic pheromone that disrupts mating between male and female gypsy moths – as it confuses the male moth by simulating the female scent.



SLOW THE SPREAD REGULATORY PROGRAM

Campgrounds:

We placed 170 target traps at campgrounds in the STS Action zone and west of the action line. A total of 29 traps were positive for gypsy moths. Literature was distributed at these locations also. Camping articles were inspected for gypsy moth life stages whenever possible. A mailer was put together and sent out to 1,020 campgrounds and resorts. The mailer contained information on gypsy moth regulations and also information on other invasive pests and diseases including emerald ash borer and oak wilt.

Christmas Trees:

Forty-five Christmas tree fields were inspected. Egg masses were found at two fields. These growers were contacted by the Christmas tree Program Coordinator and instructed on treatment and quarantine options. 32 target traps were set at Christmas tree fields in the STS Action Zone. Zero traps were found to be positive for gypsy moths.

Education:

We continued to spread the word about gypsy moth, this year focusing on trade shows for outdoor enthusiasts, the timber industry and the green industry.

Lumber and Pulp Mills:

16 mills were target trapped in the STS Action zone. Six of the traps were positive for gypsy moth. Several areas attracted attention and will be followed up on.

Media:

Four advertisements were placed in industrial publications. Four press releases were done regarding gypsy moth and regulations.

Nursery:

The STS Regulatory program assisted the Nursery program with 11 inspections at regulated nurseries.

Poster/Literature Distribution:

We cooperated with the Department of Natural Resources- Licensing and Registration to include 1/3 page inserts with our logo, website and hotline number in the boat, snowmobile and ATV renewals mailed out in 2006. These renewals went to approximately 260,000 households.

Summary:

The STS Regulatory program again dealt with personnel changes over this past year. Regardless, many of our goals were met. We still count on cooperation with other state and federal agencies to increase awareness of the gypsy moth and regulations that follow. We will continue to maintain our presence with regulated industries through educational appearances and inspections. We will also continue to research new means of outreach through advertisement and education.

Activities		
Activity	Proposed Number	Number Accomplished
Campgrounds		
Target Trapping	100	170
Christmas Trees		
Field Inspections	25	45
Target Trapping	50	32
Education Sessions		
General	1	1
Logging	5	6
RV Clubs	1	1
Youth	1	2
Christmas Trees	3	0
Nursery	3	2
Trade Shows	5	8
Lumber/Pulp Mills		
Target Trapping	50	68
Media		
Magazine Advertisements	-	4
Radio Advertisements	-	-
Radio Interview	-	-
Press Releases	4	4
Nursery Inspections		
Nursery Growers	10	11
Nursery Dealers	5	5
Outdoor Household Articles		
	-	-
Poster/Literature Distribution		
Boat/Snowmobile/ATV Inserts	260,000	260,000
Truck Rental Countertop Display	-	-
Wayside Displays	50	50
Campgrounds and Resorts	1,020	1,020
Firewood dealers and producers	165	165

POTATO ROT NEMATODE

Wisconsin Department of Agriculture, Trade and Consumer Protection inspected 5 potato fields for Potato Rot Nematode during the 2006 fall harvest, totaling 208 acres. There were no new infestations of Potato Rot Nematode found in the 2006 harvest season. Three fields with a prior history of Potato Rot Nematode showed no evidence of PRN and were released to table stock/seed pending. The potatoes from these three fields were marketed for table stock and after an additional successive crop free of PRN the potatoes could be used for seed purposes. All

three fields had been fumigated with Telon II before the 2006 planting season. Two fields going into seed potato production for the first time were found negative for Potato Rot Nematode and were accepted into certified seed.

SEED PROGRAM

During the 2006 season, WDATCP focused its attention on seed labelers with poor compliance records or histories that showed they were moving in the wrong direction. Seven companies were targeted for priority sampling. Also targeted for the 2006 season were companies who were not sampled for two years; mixtures and lawn grasses. This season, WDATCP had 689 licensed labelers and took seed samples from 95 of them for a total of 333 samples. The overall violation percentage of 11.11% is down from last season, and a low for the program over the past 10 years. Nineteen Minor and 16 Serious violations were issued. Eight seed lots were relabeled in order to meet compliance standards. Two lots were removed from sale by the labeler. Thirteen lots were returned to the labeler. One lot was ground for feed. Eight lots were sold and planted before compliance actions could be taken.

Violations for Class of Seed - 2006

Seed Class	Germ	Purity	Noxious Weed	Technical
Cereals	1	1	6	0
Grasses	10	3	2	0
Large Grain	3	0	0	0
Mixtures	1	4	2	1
Small Seeded Legumes	0	3	0	0
Total	13	11	10	1

Based on the following tables and compliance records, the WDATCP seed sampling focus for 2007 will be directed toward cereals, lawn grasses and mixtures. We also will again be focusing on labelers with poor compliance records.

Problem Seed - 2006

Crop	Samples	Violation %	Technical	Minor	Serious
Barley	6	16%	0	0	1
Lawn Grass	61	14%	0	3	4
Oat	42	16%	0	1	6
Orchardgrass	10	20%	0	1	1
Pea	7	14%	0	1	0
Pea Mixtures	19	26%	1	4	2
Perennial Ryegrass	5	20%	0	1	0
Smooth Brome	7	28%	0	1	1

2006 Samples and Violations

Class of Seed	Kind of Seed	Samples	Violations
Cereals	Barley	6	1
	Oat	42	7
	Rye	2	0
	Sorghum	3	0
	Wheat	5	0
Total Samples/Violations -Class		58	8
Violation Percentage for Class			14%
% of Total Samples/Violations		17%	21%
Large Grains	Corn	44	0
	Soybean	30	2
	Pea	7	1
Total Samples/Violations -Class		81	3
Violation Percentage for Class			4%
% of Total Samples/Violations		24%	8%
Grasses	Fescue	3	0
	Annual Ryegrass	3	0
	Kentucky Bluegrass	1	0
	Lawn Grass	61	9
	Orchardgrass	10	2
	Pasture Mix	10	1
	Perennial Rye Grass	6	1
	Smooth Bromegrass	7	2
	Festulolium	1	0
	Timothy	10	1
Total Samples/Violations for Class		112	16
Violation Percentage for Class			14%
% of Total Samples/Violations for Year		34%	43%
Mixtures	Pea/Barley	3	2
	Pea/Oat	10	3
	Pea/Triticale	6	2
Total Samples/Violations -Class		19	7
Violation Percentage for Class		-	37%
% of Total Samples/Violations		6%	19%
Small Seeded Legume	Alfalfa	24	2
	Clover	13	1
Total Samples/Violations -Class		37	3
Violation Percentage for Class		-	8%
% of Total Samples/Violations		11%	8%
Vegetable	All Veggies	26	0
Total Samples/Violations -Class		26	0
Violation Percentage for Class		-	0%
% of Total Samples/Violations		8%	0%
Total Samples/Violations		333	37
Violation Percentage Total			11.11%

PHYTOSANITARY CERTIFICATION PROGRAM

The phytosanitary certification program is a cooperative program with the United States Department of Agriculture (USDA) and with other states in the Union. It provides an integral service to shippers of plants and plant commodities by certifying their shipments are free of regulated pests before moving into international or interstate commerce. The program helps to prevent the spread of injurious plant pests from Wisconsin to other states or countries while serving the general public. This program was responsible for the export of over **\$129,646,539** of plant products in Wisconsin in 2006 (*see table on next page*). The phytosanitary certification program is a service program driven by demand, and is authorized in section 93.07(12), Wisconsin Statutes, and regulated in chapter ATCP 21, Wisconsin Administrative Code. It is supported in part by program revenue funds according to a fee schedule in s. ATCP 21.05, Wis. Adm. Code as authorized in s. 94.11, Stats.

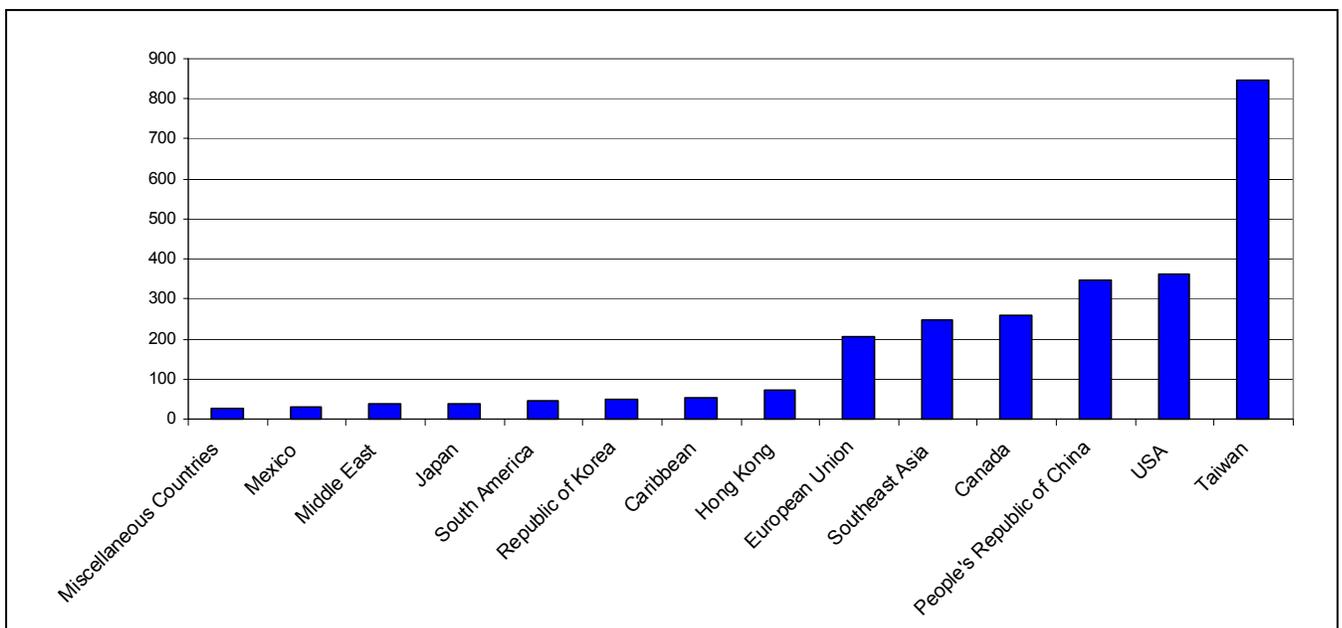
Planned Activities

- Process 1,355 applications and issue state or federal certificates. (based on a 10 year average)
- Conduct special inspections
- Respond to applicants requests for import requirements of state or foreign countries

End of Year Summary

- 2,627 certificates were issued in 2006.
 - 2,227 Federal Certificates
 - 333 Processed Plant Product Certificates
 - 1,894 Phytosanitary Certificates – 140 of these issued in PCIT
 - 400 State Certificates
 - 72 Phytosanitary Certificates
 - 328 Plant Inspection Certificates – 302 of these issued in AMANDA

Total Certificates Issued and Country Destinations



The table below represents 87% of the certificates issued in 2006, the remaining 13% were "Plant Inspection Certificates" which are not specific to commodity or were shipments with no value. The table shows the total number of plant products and the estimated dollar values of those products for the certificates issued. The estimated values were collected from the industry representatives for whom we issued the certificates to.

2006 Phytosanitary Certificates Issued and Estimated Product Values

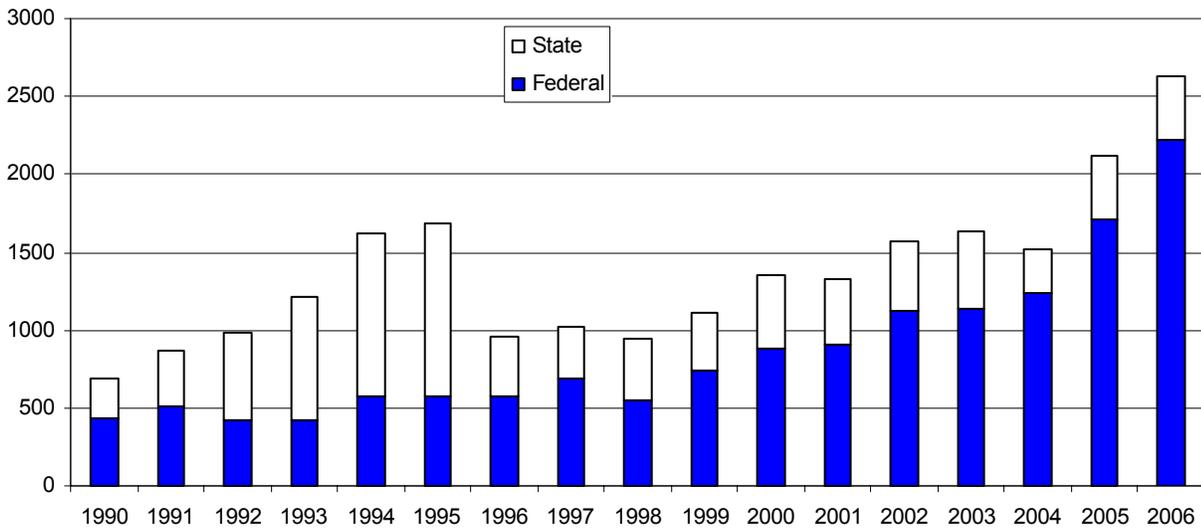
Number of Certificates	Quantity	Estimated price per unit	Unit	Estimated Total Values
501	7,377,265.44	\$1.35	board feet lumber	\$9,959,308.35
209	3,166,702.51	\$4.65	board feet veneer	\$14,725,166.69
63	55,528.00	\$14.38	cut Christmas trees	\$798,492.64
94	87,065.00	\$2.00	nursery plant(s)	\$174,130.00
9	16,279.00	\$0.96	potato plantlet(s)	\$15,627.84
26	174,100.00	\$0.05	pound(s) animal bedding material	\$8,705.00
1	3,188.50	\$0.20	pound(s) bird seed	\$637.70
69	30,442,456.23	\$0.05	pound(s) corn DDG	\$1,522,122.81
63	17,827,560.00	\$0.05	pound(s) corn gluten meal	\$891,378.00
450	685,284,893.46	\$0.06	pound(s) corn grain	\$41,117,093.61
58	989.76	\$0.94	pound(s) corn seed	\$930.38
15	468,198.25	\$0.90	pound(s) cranberry fruit	\$421,378.43
18	631,000.00	\$0.75	pound(s) cranberry vine cuttings	\$473,250.00
2	30.00	\$45.00	pound(s) ginseng seed	\$1,350.00
7	1,981.12	\$2.00	pound(s) grass seed	\$3,962.25
4	164,000.00	\$0.40	pound(s) horse radish	\$65,600.00
13	1,178,334.00	\$0.29	pound(s) kidney bean	\$341,716.86
124	5,164,429.00	\$0.08	pound(s) potato seed	\$413,154.32
7	76,400.00	\$1.20	pound(s) preserved moss	\$91,680.00
435	480,514,431.88	\$0.12	pound(s) soybean grain	\$57,661,731.83
50	4,557.76	\$0.36	pound(s) soybean seed	\$1,640.79
10	1,257.67	\$0.96	pound(s) vegetable seed	\$1,207.37
11	9,956,600.00	\$0.07	pound(s) wheat grain	\$696,962.00
2	650.00	\$0.05	seeds	\$32.50
48	3,704.00	\$70.00	veneer logs	\$259,280.00
2,289				\$129,646,539.35

Estimated Total Value of Exports to Each Country/Region

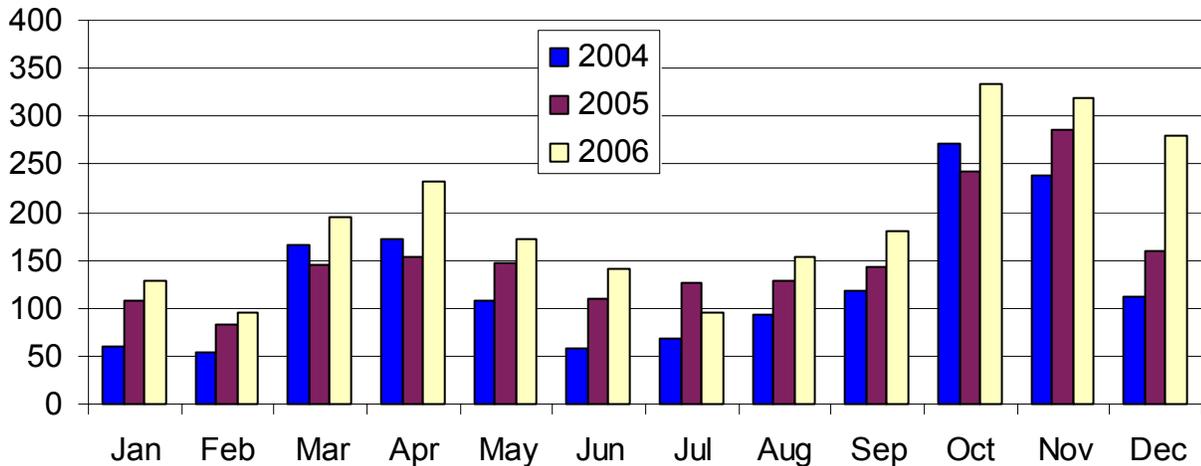
Africa	\$600	Middle East	\$219,678
The Former Soviet Republics	\$18,830	Mexico	\$324,726
Europe	\$88,737	Republic of Korea	\$985,979
USA	\$97,421	Hong Kong	\$1,365,228

Caribbean	\$102,784	Canada	\$2,152,889
South America	\$137,725	European Union	\$3,302,453
Japan	\$144,692	Southeast Asia (lumber, veneer & grain)	\$11,588,392
South Pacific	\$183,177	People's Republic of China (lumber & veneer)	\$17,075,848
		Taiwan (grain)	\$91,857,380

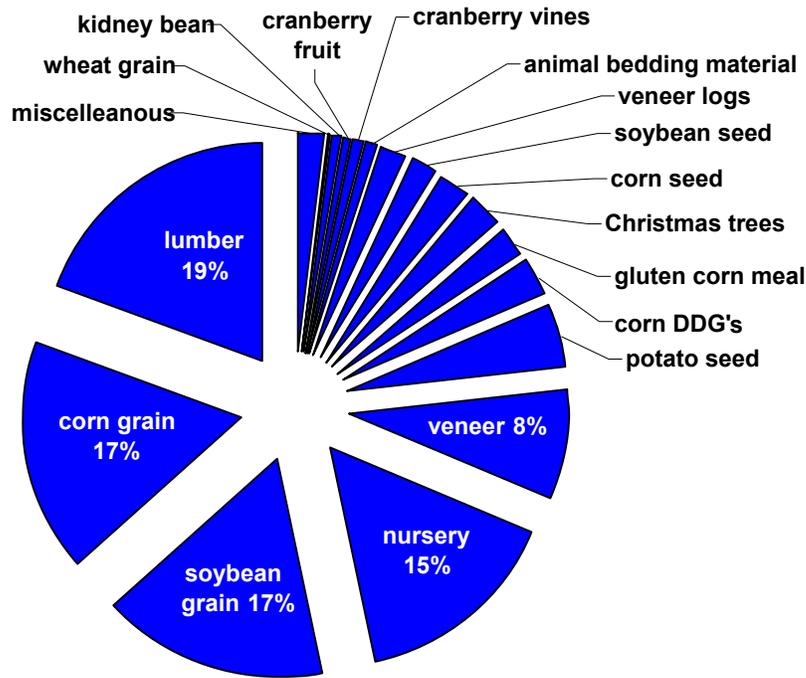
Federal and State Phytosanitary Certificate 17 Year Look



Total Number of Phytosanitary Certificates Issued by Month 3 Year Trend



Commodities & Certificates Issued in 2006



Year in Review

2006 was a record year for issuing phytosanitary certificates, most of these increases were in the shipment of grain. Increases in the production of distillers dried grains and gluten meals will be contributing factors in future shipments and certificates.

No commodities were rejected or destroyed at destination ports in 2006.

NURSERY PROGRAM

In 2006, nursery program personnel inspected 322 of the 799 licensed nursery growers in the state compared to 312 growers inspected in 2005. A total of 447 of the 1179 licensed nursery dealers in the state were inspected in 2006 compared to 447 nursery dealer inspections in 2005.

NURSERY ACREAGE AND NUMBER INSPECTED 2001-2006

Year	Acres	Increase	Number	Increase
2001	8100	+800	446	+94
2002	9577	+1477	400	-46
2003	16, 669	+7092	398	-2
2004	*	*	426	+28
2005	*	*	312	-114
2006	*	*	322	+10

*= with the change in the computer system numbers are not available

DISCUSSION

Hosta Virus X (HXV) continues to be a problem, as well as foliar nematodes. Inspectors from all regions submitted samples which tested positive for HVX. The stock sampled often originated from the Netherlands. Other viruses found include: tobacco rattle virus, cucumber mosaic virus, Poty virus, and rose mosaic virus.

In the 2006 gypsy moth trapping season, it was decided to not trap the eastern counties, which are considered generally infested. However; we hired an LTE to do trapping at the nurseries in the eastern region of the state. As of 10/04/2006 trap takedown is complete. Gypsy moth populations stayed relatively low throughout the state. No new counties will be quarantined for 2007.

Daylily rust was found at a retail outlet in Vilas county.

New Finds

The fungus *Chalara thielavioides* was possibly found on dwarf lilac, further testing is being done to confirm.

Sirococcus shoot blight (*Sirococcus conigenus*) was found on Balsam fir in Price county. This was a new host find, previously only found on spruce. Sirococcus causes dieback on the new growth. At first glance, the symptoms could be mistaken for frost injury but on closer examination, there are random needles turning brown; it does not move from the tip back.

Phomopsis tip blight (*Phomopsis juniperovora*) was found on Balsam fir in Ashland county. This was also a new host find. Phomopsis looks very similar to the Sirococcus symptoms. Glen Stanosz, of the UW-Madison Plant Pathology department, currently has graduate students working on Koch postulates for this new find.

Program changes, new personnel

Liz Meils (previously with the Slow the Spread program) was hired in January as the new lead for the Nursery program and the Apiary program

Stacy VanWormer was hired in February as the new License/Permit Program Associate

Becky Gray was hired in February as the new Regulatory Officer, lead for the Slow the Spread education/outreach program

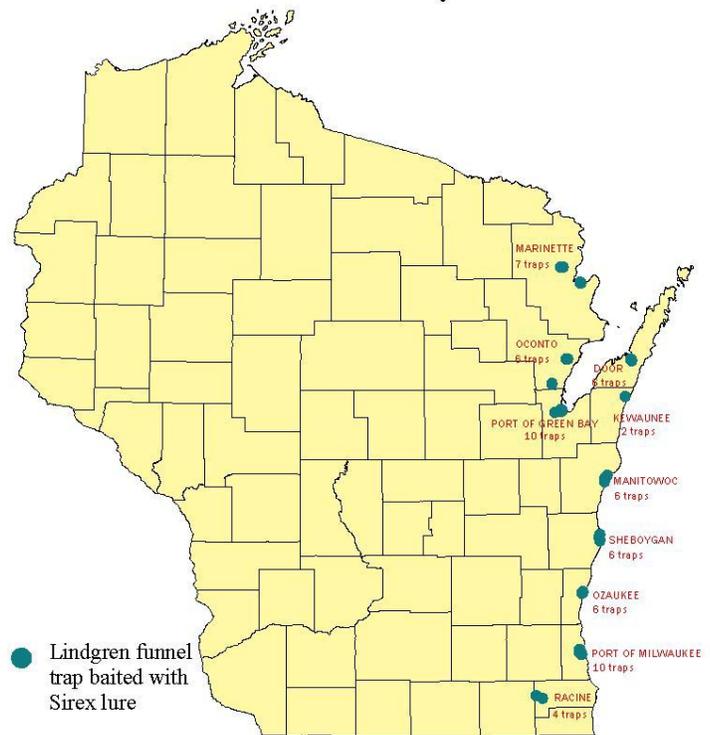
Wisconsin's *Sirex noctilio* Survey 2006

Pest Survey Specialists at the State of Wisconsin Department of Agriculture, Trade and Consumer Protection conducted a survey for *Sirex noctilio* Fabricius from June 15 through October 30, 2006. As part of the survey, 63 Lindgren funnel traps baited with *Sirex noctilio* (70% alpha pinene and 30% beta pinene) lure were placed at sites in ten eastern Wisconsin counties, including a total of twenty traps at the Ports of Milwaukee and Green Bay. In addition, traps were set in Scotch pine Christmas tree farms, county forests dominated by red pine, and in stressed pine plantings. Trap placement was initiated on June 15 and completed by July 10. Each trap was checked on five separate occasions, and a total of 315 samples were screened for siricids, cerambycids, and scolytids (See Figure 2). Fourteen suspect woodwasps were submitted to the USDA-APHIS identifier in Chicago for determination; all were identified as native species, either *Tremex columba* (Linnaeus) or *Urocerus cressoni* Norton. Survey sites were located in Marinette, Oconto, Brown, Door, Kewaunee, Manitowoc, Sheboygan, Ozaukee, Milwaukee, and Racine counties bordering Lake Michigan. *Sirex noctilio* Fabricius was not detected in Wisconsin in 2006.

EXOTIC WOOD-BORING BEETLE & BARK BEETLE SURVEY

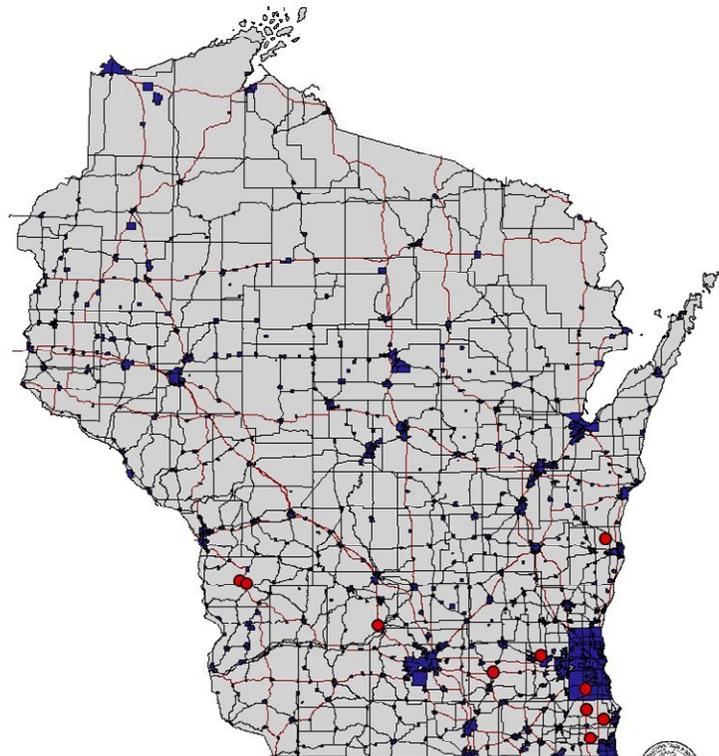
Trapping for exotic bark beetles and wood borers in 2006 was conducted by WDATCP personnel and USDA APHIS PPQ Officers as part of the Wisconsin CAPS program. Site selection was based on the PPQ Hot Zone Trapping Program concept.

Sirex noctilio Survey 2006



Wisconsin Department of Agriculture, Trade and Consumer Protection

2006 Exotic Bark Beetle and Wood-Borer Trap Sites



Wisconsin Department of Agriculture, Trade and Consumer Protection



Primary Hot Zone sites included companies that were issued Emergency Action Notifications (EANs) for SWPM violations for the presence of wood borers or bark beetles, locations that receive frequent shipments accompanied dunnage or other SWPM, and importers that receive bulk cargoes such as steel, marble, cast iron products, heavy machinery, and wooden spools. Two waste disposal facilities were also surveyed. A total of 36 Primary Hot-Zone sites were contacted and interviewed by telephone. Based on interview results, approximately 20 site visits and warehouse inspections were carried out, and a total of 33 Lindgren funnel traps (three per site, six at a major facility in east central Wisconsin) were deployed at ten high-risk sites in Kenosha, Milwaukee, Racine, Sauk, Sheboygan, Vernon, and Waukesha counties. Protocols for the national exotic wood borer/bark beetle survey were followed. A total of nine funnel traps were monitored by Krista Hamilton of the WDATCP and 24 funnel traps were managed by USDA-APHIS-PPQ staff. Traps were baited with one of the three attractants or attractant combinations: ultra-high release (UHR) ethanol lure only, UHR alpha-pinene and UHR ethanol lures together, and three-component exotic bark beetle lure (2 bubble caps, one pouch; more specific for conifer-feeding exotic bark beetles e.g. *Ips typographus*, *Ips sexdentatus*, *Hylurgus ligniperda* and *Orthotomicus erosus*). Traps were placed in late April or early May, serviced at two-week intervals, and removed by early September. Samples were prescreened by the WDATCP entomologist. Suspect specimens were submitted to the USDA APHIS PPQ identifier in Chicago, IL. No targeted exotic species were detected in Wisconsin in 2006.
